

# Electrotherapy, Ultrasound and Simultaneous Therapy with Vacuum application



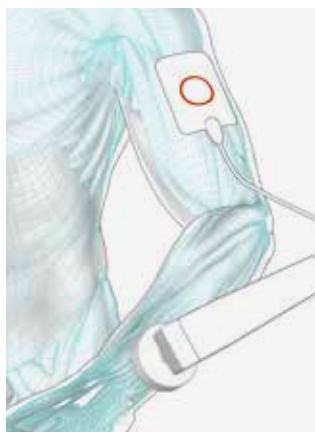


# IONOSON-DO-Evident

The new benchmark in electro-, ultrasound and simultaneous therapy in a contemporary design with deep oscillation



The IONOSON-DO-Evident offers deep oscillation therapy on the fourth channel





Combination therapy unit IONOSON-DO-Evident on an Evident trolley

## SPECIAL FEATURES

### Electrotherapy

Two-channel electrotherapy including 22 currents

Diagnostics: the user-guided navigation makes the diagnostic evaluation self-explanatory and effective

Alternating and simultaneous stimulation

Spasticity treatment acc. to Hufschmidt or Jantsch

Manual release key for emergency shut-off or intentional exercises

- Warning in case of intensity exceeding

### Ultrasound therapy

- The ergonomic ultrasound transducers 360° offer maximum safety and reliability in terms of power output. They combine 1 and 3 MHz ultrasound in an extremely durable and biocompatible titanium transducer, thereby excluding metallurgical deposits and are also suitable for subaqueous treatment. The innovative joint technology enables different types of handle and thus user-friendly operation, aimed at meeting the demands of different treatment settings and anatomical conditions.

Continuous or pulsed energy output (4 duty cycles [1:10, 1:5, 1:3, 2:5])

TPS ultrasound dosage

## GENERAL FEATURES

- Perfect user guidance through combination of touch screen and PHYSIOMED one-button operation

8" colour monitor

- Swivel and tilt mount for optimum monitor alignment at all times

Comprehensive overview of the therapy parameters including all therapy timers

Fastest therapy start: direct, through program memory or indications index

Treatment index with intelligent filtering functions based on body region, therapy form, desired therapy effect or per alphabet for quick location of the desired treatment proposal

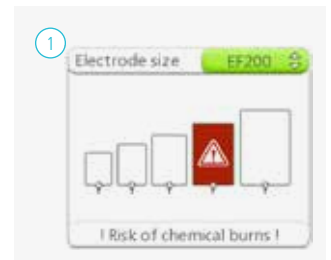
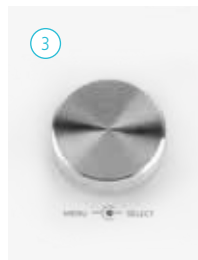
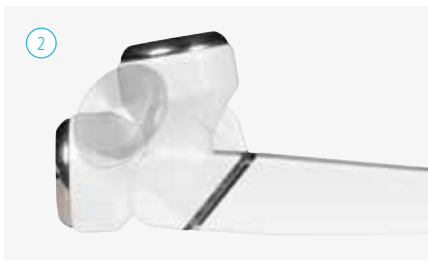
- Extensive therapy and dosage suggestions and detailed animations illustrating treatment, which can be viewed during therapy at the touch of a button

Patient database for max. 100 entries: up to 10 electrotherapy and five ultrasound settings as well as five diagnostic findings can be saved and configured as potpourris per patient

Multifunctional intensity controls with emergency stop function and quick switching between channels

Logical colour coding of electrotherapy and vacuum application accessories for quick and accurate allocation of channels and polarity

Vacuum application with PHYSIOVAC-Evident  
Simultaneous therapy



## TECHNICAL DATA

Protection class	1, type BF			
Power connection	100-115 / 230 VAC ±10%			
Mains frequency	50 – 60 Hz			
Current consumption	0.6 A – 1.2 A			
Power consumption	150 VA			
Power output stimulation current max.	GMC, MENS = 1000 µA; G = 25 mA at 500 Ohm; HV, HVS, TENS = 140 mA at 500 Ohm; DF, MF, CP, LP, RS = 70 mA at 500 Ohm; UR, IG30, IG50, FM, STOCH, FaS, T/R = 75 mA at 500 Ohm; IF, AMF, MT, KOTS = 100 mA at 500 Ohm			
Power output ultrasound max.				
Effective surface	2.5 cm <sup>2</sup> transducer	5 cm <sup>2</sup> transducer		
Ultrasound frequency	1 MHz	3 MHz	1 MHz	3 MHz
Mean power density	3 W/cm <sup>2</sup>	1 W/cm <sup>2</sup>	3 W/cm <sup>2</sup>	1 W/cm <sup>2</sup>
DO Version: Output voltage max.	400 V			
DO Version: Load impedance	10 MΩ			
DO Version: Output frequency	5 – 250 Hz			
Dimensions (W x H x D)	260 x 380 x 370 mm (monitor unfolded)			
Weight	10.2 kg			

## STANDARD ACCESSORIES

[1] Applicator handhold	[1] PHYSIOPADS adhesive electrode for DEEP OSCILLATION® (set of 4)
[2] Connection cables DEEP OSCILLATION®	[2] Plate electrodes EF 10
[1] Connection cable grey for adhesive electrodes	[4] Plate electrodes EF 50
[2] Elastic velcro straps (10 x 125 cm)	[1] Powder
[2] Elastic velcro straps (6 x 80 cm)	[1] Short introduction to electrotherapy
[1] Electrode test pen	[1] Short introduction to ultrasound therapy
[1] Mains cable	[1] Special gloves size M (100 pcs.)
[1] Manual release key	[1] Titanium neutral element
[1] Operating instructions	[1] Ultrasound gel 1 l
[1] Oscillator head Ø 5,0 cm	[1] Ultrasound transducer 360° 1/3 MHz 5 cm <sup>2</sup> or 2.5 cm <sup>2</sup>
[1] Oscillator head Ø 9.5 cm	[2] Viscose covers EF 10
[1] Patient lead	[4] Viscose covers EF 50
[1] Patient lead DEEP OSCILLATION®	



**NEW** - 3rd EDITION

# IONOSON-Expert

Professional electro-, ultrasound and simultaneous therapy  
for hospitals, rehab and physiotherapy centres



With the brand new  
**PHYSIOMED App**  
treatment protocols  
can be created, archived  
and processed!



Combination therapy unit IONOSON-Expert and vacuum application unit PHYSIOVAC-Expert on an Expert trolley

## SPECIAL FEATURES

### Electrotherapy

Two-channel electrotherapy (21 currents) with basic settings on top level and detailed parameter settings in the expert menu (with visualization of the current shape parameters)

6 diagnostic menus (incl. quick I/T curve representation): the user-guided navigation makes the diagnostic evaluation self-explanatory and effective

Alternating and simultaneous stimulation

- ① Spasticity treatment acc. to Hufschmidt or Jantsch
- ② Manual release key for emergency shut-off or intentional exercises (accessory option)

### Ultrasound therapy

- ③ The ergonomic ultrasound transducers offer maximum safety and reliability in terms of power output. They combine 1 and 3 MHz ultrasound in an extremely durable and biocompatible titanium transducer, thereby excluding metallurgical deposits and are also suitable for subaqueous treatment.

Continuous or pulsed energy output (4 duty cycles [1:10, 1:5, 1:3, 2:5])

## GENERAL FEATURES

Perfected user guidance through combination of touch screen and PHYSIOMED one-button operation

7" colour monitor incl. screensaver, visualizing all main parameters of the active channels

Favorites menu with speed-dial memory for individual device functions

Comprehensive overview of the therapy parameters including all therapy timers

Fastest therapy start: direct, through program memory or indications index

Treatment index with intelligent filtering functions based on body region, therapy form, desired therapy effect or per alphabet (incl. auto-complete of indication names) for quick location of the desired treatment proposal

Extensive therapy and dosage suggestions

Easy-to-use and extensive memory menu with cocktail and history function

Multifunctional intensity controls allowing for fast intensity reduction and quick switching between channels

Logical colour coding of electrotherapy and vacuum application accessories for quick and accurate allocation of channels and polarity

Vacuum application with PHYSIOVAC-Expert (option)

Simultaneous therapy

SD card slot for product updates



Super-fast and clear working – the new user interface

## TECHNICAL DATA

Protection class	1, type BF			
Power connection	100 – 240 VAC ±10 %			
Mains frequency	50 – 60 Hz			
Current consumption	0.6 A / 1.2 A			
Power consumption	120 VA			
Power output stimulation current max.	GMC, MENS = 1,000 µA, G = 25 mA, HV, HV5, TENS = 140 mA, DF, MF, CP, LP = 70 mA, UR, IG30, IG50, FM, STOCH, FaS, T/R = 75 mA, IF, AMF, MT, KOTS = 100 mA (bei 500 Ohm)			
Power output ultrasound max.				
Effective surface	2.5 cm <sup>2</sup> transducer	5 cm <sup>2</sup> transducer		
Ultrasound frequency	1 MHz	3 MHz	1 MHz	3 MHz
Mean power density	3 W/cm <sup>2</sup>	1 W/cm <sup>2</sup>	3 W/cm <sup>2</sup>	1 W/cm <sup>2</sup>
Dimensions (W x H x D)	315 x 175 x 370 mm			
Weight	7.4 kg			

## STANDARD ACCESSORIES

[1] Elastic velcro strap (10 x 125 cm)
[1] Elastic velcro strap (6 x 80 cm)
[1] Mains cable
[1] Operating instructions
[1] Patient lead
[4] Plate electrodes EF 50
[1] Short introduction to electrotherapy
[1] Short introduction to ultrasound therapy
[1] Ultrasound gel 250 ml
[1] Ultrasound transducer 1/3 MHz 5 cm <sup>2</sup> or 2.5 cm <sup>2</sup>
[4] Viscose covers EF 50



**NEW** - 3rd EDITION

# PHYSIODYN-Expert

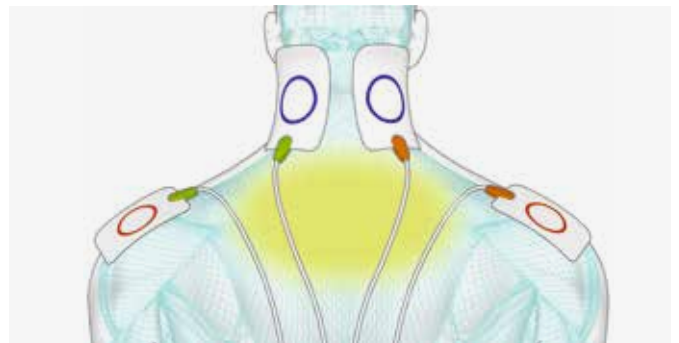
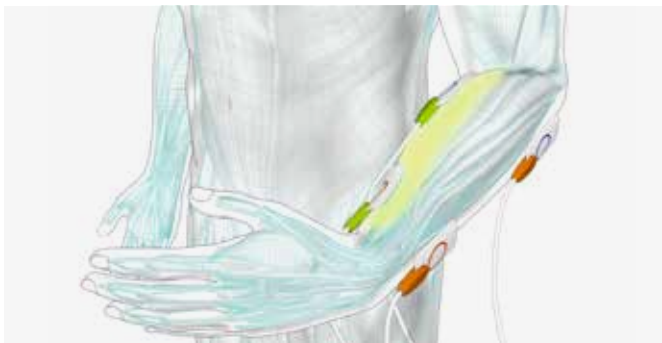
Professional electrotherapy and diagnostics for hospitals, rehab and physiotherapy centres



**NEW**

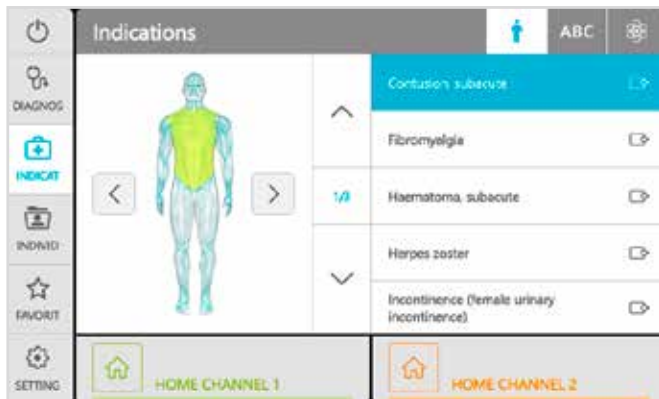


With the brand new PHYSIOMED App treatment protocols can be created, archived and processed!



Detailed illustrations facilitate even complex stimulation current treatments





The comprehensive indication menu with practical filter functions



In addition to the standard I/T curve, the diagnostics menu also offers a time-saving quick test



## TECHNICAL DATA

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Dimensions (W x H x D)	315 x 175 x 370 mm
Weight	6.2 kg

## SPECIAL FEATURES

### Electrotherapy

Two-channel electrotherapy (21 currents) with basic settings on top level and detailed parameter settings in the expert menu (with visualization of the current shape parameters)

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Vacuum application with PHYSIOVAC-Expert (option)

SD card slot for product updates

## STANDARD ACCESSORIES

[1] Elastic velcro strap (10 x 125 cm)

[1] Elastic velcro strap (6 x 80 cm)

[1] Mains cable

[1] Operating instructions

[1] Patient lead

[4] Plate electrodes EF 50

[1] Short introduction to electrotherapy

[4] Viscose covers EF 50



NEU - 3rd EDITION

# PHYSIOVAC-Expert

User-friendly vacuum application with Expert-Line devices



## SPECIAL FEATURES

### Vacuum application

Vacuum and pulsation adjustable in 10 steps

Individually adjustable lower limit of vacuum power during pulsation for optimum sticking of the electrodes in any therapy situation

Self-adjusting vacuum pump ensures constant vacuum

Vibration and noise-optimised

Water separator with safety switch for automatic shut-off (with audible and visual warning)

Autonomous suctionwave therapy

## GENERAL FEATURES

Fastest therapy start

① Logical colour coding of electrotherapy and vacuum application accessories for quick and accurate allocation of channels and polarity

## TECHNISCHE DATEN

Protection class	1, type BF
Power connection	100 – 240 VAC
Mains frequency	50 – 60 Hz
Current consumption	0.1 A (at 230 V) or 0.2 A (at 115 V)
Power consumption	60 VA
Vacuum	0 – 0.6 bar
Pulsation	0 – 60 pulsations/min adjustable in 10 steps
Dimensions (W x H x D)	250 x 100 x 350 mm
Weight	6 kg

## STANDARD ACCESSORIES BASIC

[2] Blind plug – single
[1] Connection cable
[1] Connection cable (electrotherapy/vacuum)
[1] Operating instructions
[4] Vacustop vacuum electrodes 6 cm
[4] Vacuum hoses
[4] Viscose sponges 6 cm





# Vacuum application

Vacuum application devices make it possible for you to apply stimulation currents via vacuum electrodes. The vacuum electrodes are gently affixed to the patient's skin with the help of adjustable underpressure. This method is especially suited for affixing electrodes to the buttocks, since there is no need for expensive fixation aids.

The suction action and the associated blood flow stimulation result in improved conduction qualities for the currents. With smooth adjustments, pulsing waves of suction permit enhanced stimulation during therapy.

Thanks to special suctionwave cups (Luran), vacuum application units are also suited for manual suction wave massage.

# Ultrasound therapy

Ultrasound therapy, along with electrotherapy, is one of the popular treatment forms of physical therapy. Therapeutic ultrasound is used at a frequency of 1 MHz or 3 MHz, as continuous output or pulsed output in different duty cycles. Ultrasound therapy is classified as mechanical thermal therapy due to its complex effects. Depending on therapy parameters (therapy frequency, output type, dose, therapy duration and mode), the emphasis is on a thermal effect that results from ultrasound therapy (thermal growth and reflection from tissue barriers such as bones or joints) or a micromassage in the treated tissue segments. The effects of ultrasound therapy can be summarised as follows:

- » Hyperemisation
- » Acceleration of metabolic function (microcirculation, diffusion processes)
- » Increasing the tensibility of connective tissue structures (collagen fibres)
- » Alleviation of pain
- » Muscular relaxation and spasm resolution
- » Acceleration of the healing process
- » Stimulation of fracture healing

Since ultrasound is reflected by air, you should use a coupling agent (ultrasound gel) or connect under water (subaqueous) for optimum conduction of the ultrasonic waves from the transducer to the tissue.

According to current knowledge an objectively reproducible dosing in ultrasound therapy, thus also valid for scientific works, is only possible with the innovative ultrasound dosing TPS.

For more detailed information, please read our comprehensive brochure "Short introduction to ultrasound therapy", which contains many practical examples.



## Simultaneous therapy

The transducer acts as the electrical stimulation cathode and a plate or vacuum electrode acts as anode in simultaneous therapy using electrotherapy and ultrasound (with a cumulative therapy effect). Simultaneous therapy is available by using combination units as well as by combining any electrotherapy unit with the related ultrasound therapy unit. Simultaneous therapy is used particularly in pain therapy. Current selection combined with ultrasound parameters ensure a wide variety of treatment combinations.



Combination therapy

IONOSON-DO-Evident

IONOSON-Expert

Electrotherapy

PHYSIODYN-Expert

		IONOSON-DO-Evident	IONOSON-Expert	Electrotherapy	PHYSIODYN-Expert
<b>DEEP OSCILLATION®</b>	Deep oscillation	x			
<b>Currents</b>	IF (Classic interference current)	x	x		x
	AMF (Bipolar interference current)	x	x		x
	MT (Medium-frequency muscle stimulation)	x	x		x
	KOTS (Russian stimulation)	x	x		x
	G (Galvanisation)	x	x		x
	GMC (Galvanisation with microcurrent)	x	x		x
	DF (Diadynamic current diphasé fixe)	x	x		x
	MF (Diadynamic current monophasé fixe)	x	x		x
	CP (Diadynamic current modulé en courtes périodes)	x	x		x
	LP (Diadynamic current modulé en longues périodes)	x	x		x
	RS (Diadynamic current)	x			
	UR (Ultra stimulation current acc. to Träbert)	x	x		x
	HV (High voltage current)	x	x		x
	TENS (Transcutaneous electric nerve stimulation)	x	x		x
	MENS (Electric nerve stimulation with microcurrent)	x	x		x
	IG 30 (Pulse galvanization 30)	x	x		x
	IG 50 (Pulse galvanization 50)	x	x		x
	FM (Frequency-modulated current)	x	x		x
	STOCH (Stochastic current)	x	x		x
	FaS (Faradic surge current)	x	x		x
	HVS (Current mode with high voltage stimulation characteristics)	x	x		x
	T/R (Pulses with adjustable parameters)	x	x		x
<b>Diagnostics</b>	Faradic excitability test	x	x		x
	Medium-frequency test (Lange)	x	x		x
	Accommodation quotient	x	x		x
	Rheobase/chronaxy	x	x		x
	I/T curve	x	x		x
<b>Treatment</b>	Spasticity treatment acc. to Hufschmidt or Jantsch	x	x		x
	Alternating and simultaneous stimulation	x	x		x
	Two-channel electrotherapy	x	x		x
	Simultaneous therapy	x	x		
<b>Ultrasound</b>	1 MHz ultrasound	x	x		
	3 MHz ultrasound	x	x		
	Biocompatible titanium transducer	x	x		
	Transducer 360°	x			
	TPS	x			
	Subaqueous treatment	x	x		
<b>Other features</b>	Touch screen	x	x		x
	Application animations	x			
	Treatment index with filtering functions	x	x		x
	One-button operation	x	x		x
	Warning in case of intensity exceeding	x			
	Multifunctional intensity controls	x	x		x
	Favorites menu		x		x
	Patient database	x	x		x
	SD card slot for product updates		x		x



# Electrotherapy

Electrotherapy is an important element of physical therapy. Current stimulation treats the tissue via electrodes (plate electrodes, adhesive electrodes, vacuum electrodes, or special electrodes such as punctiform or pad electrodes) on the selected areas. Depending on the current mode and the selection of parameters (i. e. impulse form, impulse duration, pause time, frequency, intensity) the stimulation current may have significant effects in the following areas of treatment:

- » Pain reduction
- » Stimulation of blood circulation and trophic enhancement
- » Nerve stimulation, for example the training of innervation and treatment of paralysis
- » Muscle stimulation to build up/maintain muscles
- » Muscular relaxation
- » Iontophoresis

The different electrotherapy currents can be classified according to their generation and specific method of treating the tissue:

- » Medium-frequency current: this is an alternating current, derived from superposition of a basic frequency (2–9.5 KHz) and a modulation frequency (0–250 Hz). This superposition takes place within the equipment for AMF current (amplitude modulated medium frequency current) as well as for medium-frequency currents for muscle stimulation (e.g. KOTS). The previously modulated current can therefore be applied via only two electrodes on the patient. With classic interference current

IF, however, superposition delivers both frequencies when it reaches the patient's tissue. For this reason, in this case it is essential to always apply four electrodes for treatment. The high therapeutic effectiveness of the medium-frequency current is achieved with minimum skin irritation and broad penetration and is more acceptable to patients.

- » Low-frequency current: an impulse current with frequencies under 1000 Hz is classified as a low-frequency current. The total range of application is covered by the different low-frequency currents DF, MF, CP, LP (diadynamic currents), UR (ultrastimulation current), HV (high voltage current), FaS (faradic current), TENS (mono- or biphasic rectangular impulse), MENS (variable microcurrent), IG 30 and IG 50 (impulse galvanisation), FM (frequency-modulated current), STOCH (stochastic current) and T/R (exponential current). In contrast to medium-frequency current, low frequency current can also be used for treatment of peripheral paralysis.
- » Galvanic current (G) is a direct current that ensures a constant energy current flow through the tissue. Galvanic current is primarily used for stimulation of blood flow and pain reduction as well as iontophoresis (diffusion of medicaments into the tissue with the aid of current).

For more detailed information, please read our comprehensive brochure "Short introduction to electrotherapy", which contains many practical examples.

## "Clean currents" for better therapy results

Quite a few electrotherapy instruments today no longer emit stimulation currents in the form described in teaching manuals, and on which efficient electrotherapy is proven to be based.

Instead of this – and in many cases due to cost savings – similar, but not identical, curve forms are used. Nobody knows exactly whether these cause the desired effects in tissue in the same way as the original currents. Instead of medium frequency currents, for example, low frequency ones are generated, and vice versa. In a direct comparison, the difference between "genuine" and "similar" currents can often be felt, but it only becomes visible when the current curves are viewed on an oscilloscope. Galvanic currents with spikes can be found, distorted instead of harmonic sinusoidal curves, or even deformed envelopes of diadynamic currents.

PHYSIOMED distances itself firmly from this trend of compromising therapeutic success only for the sake of maximising profits. PHYSIOMED instruments therefore only supply 'clean' currents. This also explains the often heard opinion of competent electrotherapy users, that despite using the same parameters, they obtain better therapeutic results with PHYSIOMED instruments than with other stimulation current instruments.



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**PHYSIOMED®**